EXPERIMENTAL CELL RESEARCH

VOLUME 28 · 1962

EXPERIMENTAL CELL RESEARCH

Published under the auspices of

THE INTERNATIONAL SOCIETY FOR CELL BIOLOGY

EDITORS:

H. BAUER · J. BRACHET · T. CASPERSSON · M. CHÈVREMONT

A. ENGSTRÖM · E. FAURÉ-FREMIET · G. FOLEY · T. GUSTAFSON · G. KLEIN

O. LINDBERG · D. MAZIA · G. MONTALENTI · A. MOSCONA · J. PAUL

SIR JOHN RANDALL · J. RUNNSTRÖM · F. O. SCHMITT · C. H. WADDINGTON

R. W. G. WYCKOFF

VOLUME 28 · 1962

ACADEMIC PRESS, New York and London

COPYRIGHT, © 1962, BY ACADEMIC PRESS INC.

All Rights Reserved

No part of this book may be reproduced in any form, by photostat, microfilm, or any other means, without written permission from the publishers.

Printed in Sweden

Almqvist & Wiksells

BOKTRYCKERI AB

UPPSALA 1962

66 16349
E95
V.28

TABLE OF CONTENTS

NUMBER 1, October 1962

Steinberg, M. S., The role of temperature in the control of aggregation of dissociated embryonic cells 1
Deams, W. T. and Oort, J., Electron microscopic and histochemical observations on polymorphonuclear leucocytes in the reversed Arthus reaction . 11
Hill, M., Intercellular passage of tritium-thymidine-labeled DNA from donor lymphocytes to recipient bone marrow cells 21
Cook, G. M. W., Heard, D. H. and Seaman, G. V. F., The electrokinetic characterization of the Ehrlich ascites carcinoma cell 27
Lasnitzki, I., Hypovitaminosis-A in the mouse prostate gland cultured in chemically defined medium 40
Fujita, S., Kinetics of cellular proliferation 52
Brandes, D., Groth, D. P. and Gyorkey, F., Occurrence of lysosomes in the prostatic epithelium of castrate rats 61
Norman, C., Goldberg, E. and Porterfield, I. D., The effect of visible radiation on the functional life-span of mammalian and avian spermatozoa . . 69
Simard-Duquesne, N. and Couillard, P., Ameboid movement. I. Reactivation of glycerinated models of *Amoeba proteus* with adenosinetriphosphate . . 85
Simard-Duquesne, N. and Couillard, P., Ameboid movement. II. Research of contractile proteins in *Amoeba proteus* 92
Eliasson, E., Arginase in young chick embryos. II. The detailed pattern of early arginase accumulation 99
Hallén, O., A working unit for preparative work under the stereo microscope 107
Terayama, H., Surface electric charge of ascites hepatomas and the dissociation of islands of tumor cells 113
Holbrook, D. J., Jr., Evans, J. H. and Irvin, J. L., Incorporation of labeled precursors into proteins and nucleic acids of nuclei of regenerating liver . 120
Evans, J. H., Holbrook, D. J., Jr., and Irvin, J. L., Changes in content of nuclear proteins and nucleic acids in regenerating liver 126
Kordan, H. A. and Morgenstern, L., A comparison of nucleoli in normal and proliferating citrus fruit tissue *in vitro* 133
Stevens, C. D. and Turner, M. E., Effects of 3,3-dimetyl-1-phenyltriazene on the rate of cleavage of *Patiria* at several partial pressures of carbon dioxide 139
Kissling, K.-H., The metabolism of growing muscle. I. Respiration and oxidative phosphorylation of muscle mitochondria from rats of various ages. . 145
Solomon, J. B., A sex difference in the splenomegaly syndrome in chick embryos injected with adult spleen cells or blood 151
Fujita, S. and Miyake, S., Selective labeling of cell groups and its application to cell identifications 158

Millington, P. F., Finean, J. B., Forbes, O. C. and Frazer, A. C., Studies on the effects of aminopterin on the small intestine of rats. I. The morphological changes following a single dose of aminopterin 162
Millington, P. F., Forbes, O. C., Finean, J. B. and Frazer, A. C., Studies on the effects of aminopterin on the small intestine of rats. II. Fat absorption defects following a single intramuscular injection 179
Runnström, J. and Kriszat, G., The gelating effect of lower doses of trypsin on sea urchin eggs and its removal by exposure to glutathione 192

PRELIMINARY NOTES

Bingley, M., Bell, L. G. E. and Jeon, K. W., Pseudopod initiation and membrane depolarisation in *Amoeba proteus* 208
Nyholm, M., Saxén, L., Toivonen, S. and Vainio, T., Electron microscopy of transfilter neural induction 209
Chaytor, D. E. B., Mitotic index *in vitro* of embryonic heart fibroblasts of different donor ages. 212

NUMBER 2, November 1962

Easty, G. C. and Mercer, E. H., An electron microscope study of model tissues formed by the agglutination of erythrocytes 215
Kimball, R. F. and Vogt-Köhne, L., Effects of radiation on cell and nuclear growth in *Paramecium aurelia* 228
Sullivan, W. D. and Snyder, R. L., The effect of X-radiation on fumarase activity during different stages of cell division in *Tetrahymena pyriformis* Gl. 239
Pettengill, O. S. and Fishman, W. H., Influence of testosterone on glycine incorporation into mouse kidney β-glucuronidase 248
Aketa, K., Cytochemical observations on disappearance of ribonucleic acid-rich granules upon fertilization in egg of the medaka (*Oryzias latipes*) 254
Rigler, R., Jr., Untersuchungen an isolierten Mäuseleberzellen nebst Angabe eines Isolierverfahrens zur Bestimmung ihres Trockengewichtes. 260
Thormar, H., Effect of temperature on the reproduction rate of *Tetrahymena pyriformis* 269
Watson, M. R. and Hopkins, J. M., Isolated cilia from *Tetrahymena pyriformis* 280
Albertsson, P. Å. and Baird, G. D., Counter-current distribution of cells. . 296
Hiramoto, Y., An analysis of the mechanism of fertilization by means of enucleation of sea urchin eggs 323
Goutier, R. et Leonard, A., Relation entre l'activité de la désoxyribonucléase acide et la croissance chez le rat 335
Cota-Robles, E. H. and Duncan, P. H., The effect of D-glutamic acid upon spheroplast formation in *Escherichia coli* B. 342

TWAROG, J. M. and LARSON, B. L., Cellular identification of β-lactoglobulin synthesis in bovine mammary cell cultures 350
TRITSCH, G. L. and MOORE, G. E., Spontaneous decomposition of glutamine in cell culture media 360
THOMAS, L. E. and LEVIN, E., Cellular lipoproteins. IV. The insoluble lipoproteins of various tissues 365
INGRAM, R. L., Maintenance of organized adult liver tissue *in vitro* 370
DUPREE, L. T., SANFORD, K. K., WESTFALL, B. B. and COVALESKY, A. B., Influence of serum protein on determination of nutritional requirements of cells in culture 381
BECK, J. SWANSON, The behaviour of certain nuclear antigens in mitosis. . . 406
JOHNSON, B. F., Influence of temperature on the respiration and metabolic effectiveness of *Chilomonas* 419
KURATA, Y., On the appearance of hydrogenase, nitrate reductase and aspartase during the ontogeny of the frog 424

PRELIMINARY NOTES

ŠKREB, Y. et BEVILACQUA, L., Photorestauration des fragments d'amibes irradiés 430
KARPFEL, Z. and KOLÁŘ, V., Change in the metaphase/prophase ratio as an indicator of damage by small doses of X-rays 433
MALHOTRA, S. K., Inturnings of the outer limiting mitochondrial membrane . . 435
BRIEGER, E. M. and ALLEN, J. M., Cytopathological changes in lepra cells . . 438
OWEN, J. J. T., The origin of new bone around heterografts transplanted to the chick embryo chorioallantois 441
TEWARI, H. B. and BOURNE, G. H., Histochemical distribution of enzymes associated with the metabolism of carbohydrates in the various elements of the cerebellum 444
MUSTAKALLIO, K., Adenosine triphosphatase activity in neural elements of human epidermis 449
MITCHISON, J. M. and LARK, K. G., Incorporation of ^{3}H-adenine into RNA during the cell cycle of *Schizosaccharomyces pombe* 452
GLOBERSON, A., FIORE-DONATI, L. and FELDMAN, M., On the role of the thymus in recovery of immunological reactivity following X-irradiation . 455

NUMBER 3, DECEMBER 1962

KUYPER, C. M. A., LIÉBECQ-HUTTER, S. et CHÉVREMONT-COMHAIRE, S., Effets de radiations ionisantes sur l'activité mitotique et les acides désoxyribonucléiques de fibroblastes cultivés *in vitro* 459
SPICER, S. S., Basic protein visualized histochemically in mucinous secretions 480
HAM, R. G., Clonal growth of diploid Chinese hamster cells in a synthetic medium supplemented with purified protein fractions 489
JARLSTEDT, J., The distribution of RNA in the cerebellum of the rabbit 501

Rasch, R. W., The production of specific chromosome alterations with deoxyribonuclease 507
Blum, J. J. and Padilla, G. M., Studies on synchronized cells: The time course of DNA, RNA, and protein synthesis in *Astasia longa* 512
Cook, J. R. and Cook, B., Effect of nutrients on the variation of individual generation times 524
Lasfargues, E. Y., Concerning the role of insulin in the differentiation and functional activity of mouse mammary tissues 531
Ficq, A., Localisation d'un acide ribonucléique (RNA) dans les oocytes d'Astéries 543
Klein, R. L., Effects of tonicity and pH on apyrase of *Acanthamoeba* sp. cells and cell fractions 549
Nei, T., Electron microscopic study of microorganisms subjected to freezing and drying: cinematographic observations of yeast and coli cells 560
Tewari, H. B., Quinton-Cox, R. and Bourne, G. H., Further observations on the neurokeratin network of perpheral nerves 576

PRELIMINARY NOTES

Therkelsen, A. J. and Petersen, G. B., Frequency of sex-chromatin-positive cells in the logarithmic and postlogarithmic growth phases of human cells in tissue culture 588
Petersen, G. B. and Therkelsen, A. J., Number of nucleoli in female and male human cells in tissue culture 590
Anteunis, A., Fautrez-Firlefyn, N. et Fautrez, J., Origine et ultrastructure des grains métachromatiques dans l'œuf d'*Artemia salina* 592
Ladda, R., Intranuclear ferritin 595
Sachs, G., De Duve, C., Dvorkin, B. S. and White, A., Effect of adrenal cortical steroid injection on lysosomal enzymic activities of rat thymus 597
Cowden, R. R., RNA and yolk synthesis in growing oocytes of the sea urchin, *Lytechinus verigatus* 600
Clementi, F. and Fumagalli, R., Intracellular localization in the liver of exogenous ^{3}H-cholesterol: Autoradiographic and radiochemical assay 604
Franks, D., Gurner, B. W., Coombs, R. R. A. and Stevenson, R., Results of tests for the species of origin of cell lines by means of the mixed agglutination reaction 608
Barton, R., A comparison of the effect of some heavy metal stains on sections of permanganate-fixed plant tissue 612
Hagiwara, A., A new method for the detection of blood group antigen and its application to FL human amnion cell 615
Caspersson, T. O., Foley, G. E. and Killander, D., Ultraviolet absorption studies of polyoma virus-infected cells 618
Caspersson, T. O., Farber, S., Foley, G. E., Lomakka, G., Killander, D. and Carlsson, L., Cytochemical study of nucleolus-ribosome system in populations of normal and neoplastic cells 621